

105	104	103	102
	Government entities		
	acting as payor		
	Organizations taking insurance risk &		
	PSOS (Provider Sponsored	-	
	Insurance Payors		
	Commercial Indemnity Health		
	insured		
	Commercial Employees who are self-		Certified Medical Assistant (CMA)
	Hospice systems		Certified Registered Nurse Midwife
	Medicare		(CRNP)
pharmaceutical accounts	Medicaid	-	Certified Registered Nurse Practitioner
Public relations companies handling	County, City)		hysician Assistant (PA)
pharmaceutical accounts	Government Databases (U.S., State,		tc.)
Advertising agencies handling	Managers/Management Companies)		Front office personnel (receptionist,
companies)	PPMs (Physician Practice	Healthcare provider	Technical Assistant
representing pharmaceutical	Managers/Management Companies)	Guardian	EMT/EMT-P (paramedic)
independent, 3 <sup>rd</sup> -party companies	PBMs (Pharmacy Benefit	Executor	Respiratory Therapist
Marketing Companies (including	Organizations and other Insurers)	Relative	Nurse
Distributors	HMOs (Health Management	Patient Proxy	Physician office staff & Hospital staff
Manufacturers	Systems	Patient	Physician
Pharmaceutical Companies	Healthcare Services Management	Patient:	Healthcare Provider:

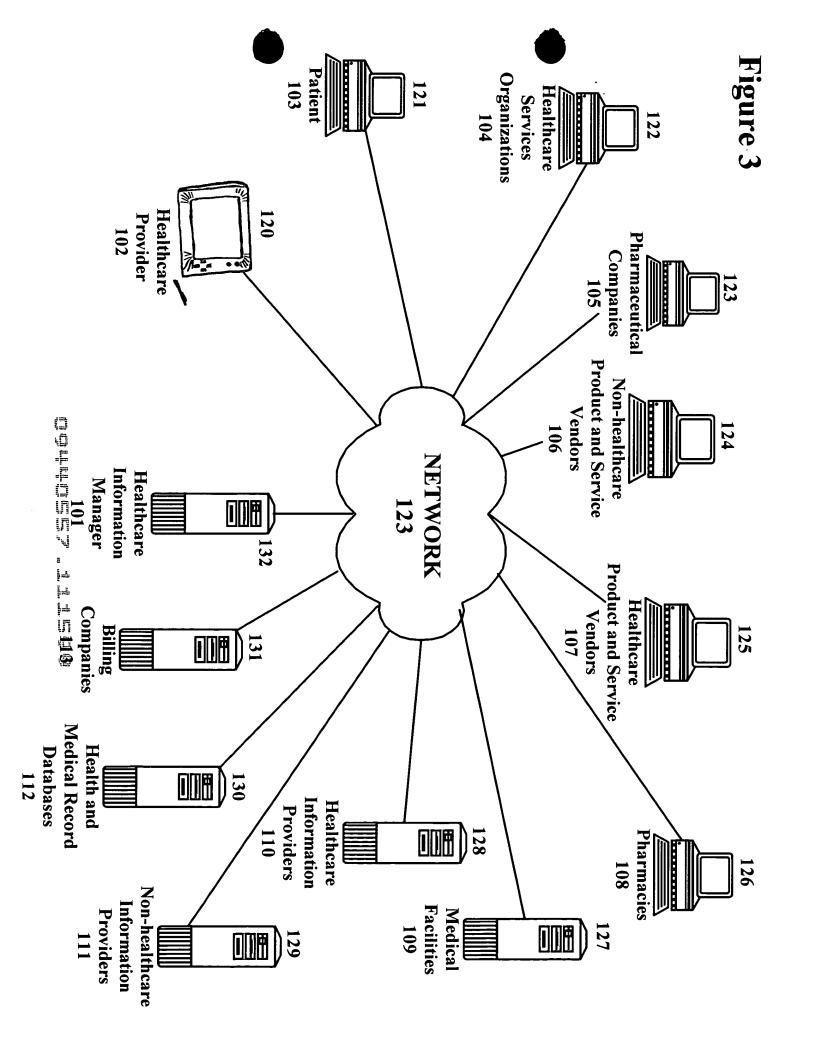
Fig. 2A

	108	5	106
Government Medical Facilities			
Physical Therapy Centers			
Subacute Hospitals/Facilities			
Nursing Homes			
Skilled Nursing Facilities			
Hospices			
Pain Management Centers			
Cancer Centers			
Occupational Health Centers			
Medical Records Centers			
Rehabilitation Clinics			
Surgery Centers	Clinic/Outpatient-based		
Mobile Treatment Facilities	Hospital-based		Fovernment entities
Mobile Testing Facilities	PBM fulfillment centers	Government entities	Non-medical charities
Imaging Centers	Internet-based	injuries	Educational Institutions & Companies
Laboratories	Mail Order	general conditions, illnesses, diseases,	Auction Companies
Outpatient Clinics	Mass Merchandising	specific and/or	Retail Merchants
Treatment Centers	Independent	distributors, resellers, disease prevention,	Online Trading Companies
Physician Offices	Chain	manufacturers,	Financial Institutions
Hospitals	Retail Pharmacies	Non-pharmaceutical product and service	Vendors
Medical Facilities	Pharmacies	Health Product & Service Vendors	Non-Healthcare Product & Service

FIG. 2B

101	113	112	111	110
				American College of Cardiology
				American Medical Society
				Professional Societies
				Non-profit organizations
				Charities
				Control
systems				Centers for Disease
Collocated processing				of Health
Collocated storage systems				National Institutes
systems			Governmental entities	ublic Health Institutions
Third-party processing			sites	HealthScout)
Third-party storage systems			Information-related Web	supply companies (e.g.
Off-site processing systems			Charitable organizations	3"-party information
Off-site storage systems	companies	Data Center Record Storage	companies	Consumer-oriented
On-site processing systems	Third-party transaction	MedicaLogic	Price Comparison	Professional
On-site storage systems	Product billers	drkoop.com	companies	sites/portals
(ReCare Data Center)	Insurance companies	PersonalMD.com	Consumer reporting	Health Information Web
Management System	Medical billers	Databases	<b>Information Providers</b>	Providers
<b>Healthcare Information</b>	Billing Companies	Health/Medical Record	Non-Healthcare	Health Information

Fig. 2C



Administrative notices Personal scheduling information, alerts, etc Referral information, requests, reports Consult information, requests, reports Prescription pick-up confirmation Prompts for sending patient information Patient's Medical Record Information **Healthcare Provider:** Audio (realplayer, MP3, live person-to-person/conference) Video (downloadable, live person-to-person/conference) Pharmacopoeia information Billing and Coding information Patient insurance enrollment status CME (Continuing Medical Education) information (courses, programs, test evaluations, credits, certificates) Test orders, results, and interpretations Warnings, alerts, correction requests, clarification requests, change requests Prescription orders, refill requests, refill confirmations, etc Relevant health information (journals, articles, news, texts, updates, alerts, etc.) Lab orders and results atient-entered topics of interest ormulary information harmaceutical or other relevant advertisements **MRIs** X-rays Diagnoses Allergies Medications Chief Complaint/Reason for visit **EKGs** Counseling and Health Education Physical Examination Findings ROS (Review of Systems) PFSH (Past, Family, and Social History *lmmunizations* 

#### Pharmacopoeia information Personal scheduling information, alerts, etc Patient insurance enrollment status Formulary information Patient-entered topics of interest Referral information, reports Test results and interpretations Prescription pick-up confirmation Warnings, alerts, correction requests, clarification requests, change requests Selected lab orders (urinalysis, TB screen, etc.) and results Messages from physicians/physician proxies Prompts for sending information to others Pharmaceutical or other relevant advertisements Patient's Medical Record Information Information related to pharmacy selection (maps, directions) Pharmacy selection Pharmacy selection criteria **General Patient Information** Patient or Proxy: Video (downloadable, live person-to-person/conference) Consult information, reports Prescription refill requests, refill confirmations, etc. Relevant health information (journals, articles, news, texts, updates, alerts) Informative programs (medical, healthcare, wellness, exercise, etc.) **MRIs** X-rays **EKGs** Name of insurance company and policy or group # Employer and occupation information **Physical Examination Findings** Medications PFSH (Past, Family, and Social History Chief Complaint/Reason for visit Demographics (name, address, phone, email, etc.) Diagnoses ROS (Review of Systems) Allergies Formulary information Billing information Regulation information Enrollment information Audio (realplayer, MP3, live person-to-person/conference) Video (downloadable, live person-to-person/conference) Healthcare Services Organizations

<u>506</u>	<u>505</u>	504	<u>503</u>
pickup information)			
Compliance reports (e.g. patient			person-to-person/conference)
Transaction information	Educational information		Audio (realplayer, MP3, live
substitutions, etc.	Advertisements		to-person/conference, etc.)
Requests for clarification, refills,	Transaction information		Video (downloadable, live person-
Alerts/Warnings	Retail information		Prescribing habits
etc.	Financial information		Scheduling information
Reports on ad effectiveness, ROI,	person-to-person/conference)		excerpts), etc.
Prescription information	Audio (realplayer, MP3, live		burnal articles, textbooks (and/or
person-to-person/conference, etc.)	to-person/conference, etc.)		Varnings and alerts/recalls
Audio (realplayer, MP3, live	Video (downloadable, live person-		physician prescribing habits, etc.
to-person/conference, etc.)	consumer buying habits, etc.	Educational information	Reports on ad effectiveness, ROI,
Video (downloadable, live person-	Reports on ad effectiveness, ROI,	Advertisements	Prescribing information
information	service information)	Transaction information	White Papers
Pharmacy selection and routing	Information (product information,	Retail information	brochures, etc.)
Logos	Advertisements	Financial information	Promotional Materials (printable
Advertisements	Vendors	Service Vendors	Advertisements
Pharmacies	Health Product and Service	Non-Healthcare Product and	Pharmaceutical Companies

Fig. 4C

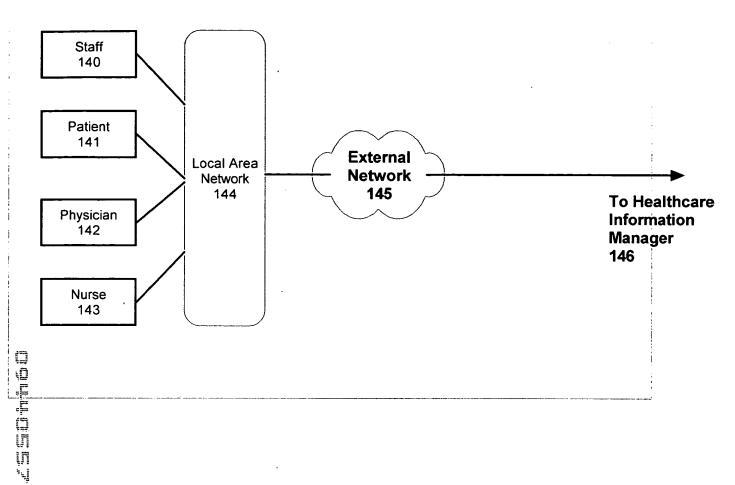
<u>507</u>	not explicitly mentioned here.	Plus all items listed under Healthcare Provider	person/conference)	Audio (realplayer, MP3, live person-to-	person/conference)	Video (downloadable, live person-to-	Billing Information	Insurance Information	information	CME (Continuing Medical Education)	Insurance information	Advertisements			Referral information, requests, and reports	Consult information, requests, and reports	MRIs, X-rays, CTs, etc.)	Test orders, results, and interpretations (EKGs,	confirmations, etc.	Prescription orders, refill requests, refill	Lab orders and reports	Medical Records	Medical Facilities
508													All items listed in Medical Facilities.	Advertisements	person/conference)	audio (realplayer, MP3, live person-to-	person/conference)	video (downloadable, live person-to-	books	articles	news	Health information	Health Information Providers
509													All items listed in Medical Facilities.	Advertisements	person/conference, etc.)	Audio (realplayer, MP3, live person-to-	person/conference, etc.)	Video (downloadable, live person-to-	Texts	Articles	News	Information	Non-Healthcare Information Providers

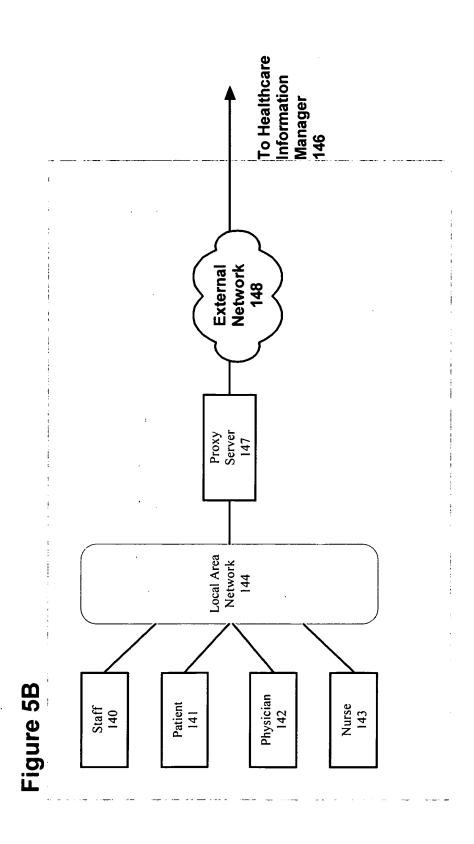
Fig. 4D

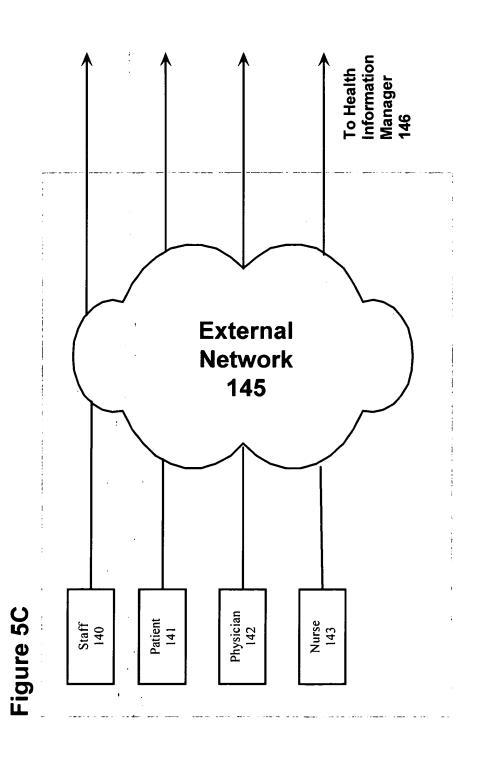
512	<u>511</u>	510
and Billing Companies.		
Information Providers, Health/Medical Record Database,		
Facilities, Health Information Providers, Non-Healthcare		
Health Product and Service Vendors, Pharmacies, Medical		
Companies, Non-Healthcare Product and Service Vendors,		
Healthcare Services Organizations, Pharmaceutical	Provider and Medical Facilities.	Provider.
All items under Healthcare Provider, Patient,	All items listed under Healthcare	All items listed under Healthcare
Healthcare Information Manager	Billing Companies	Health/ Medical Record Databases

Fig. 4E

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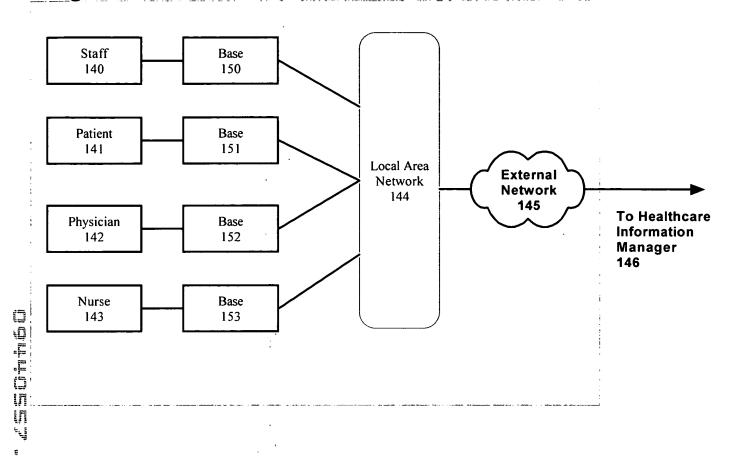






### Figure 5D

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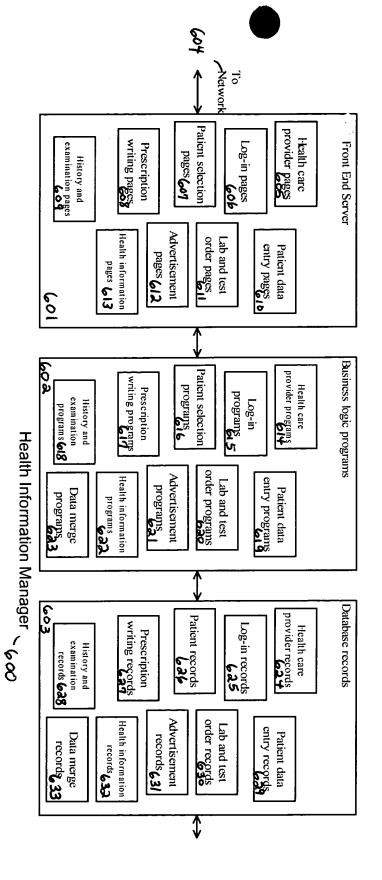
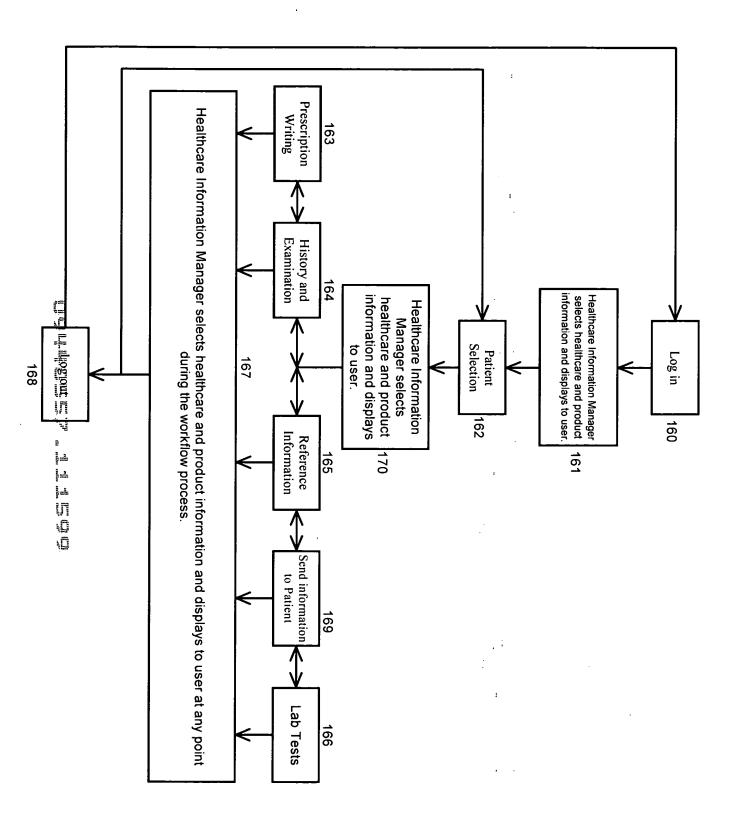


Figure 6

Figure 7



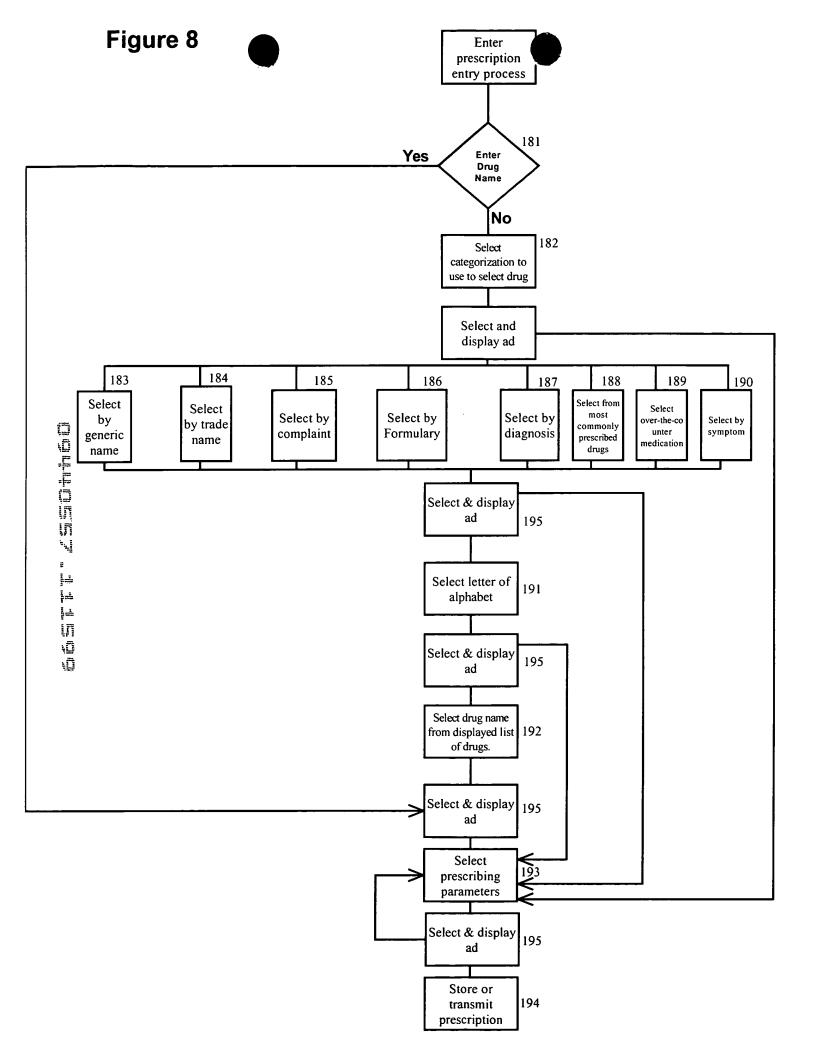
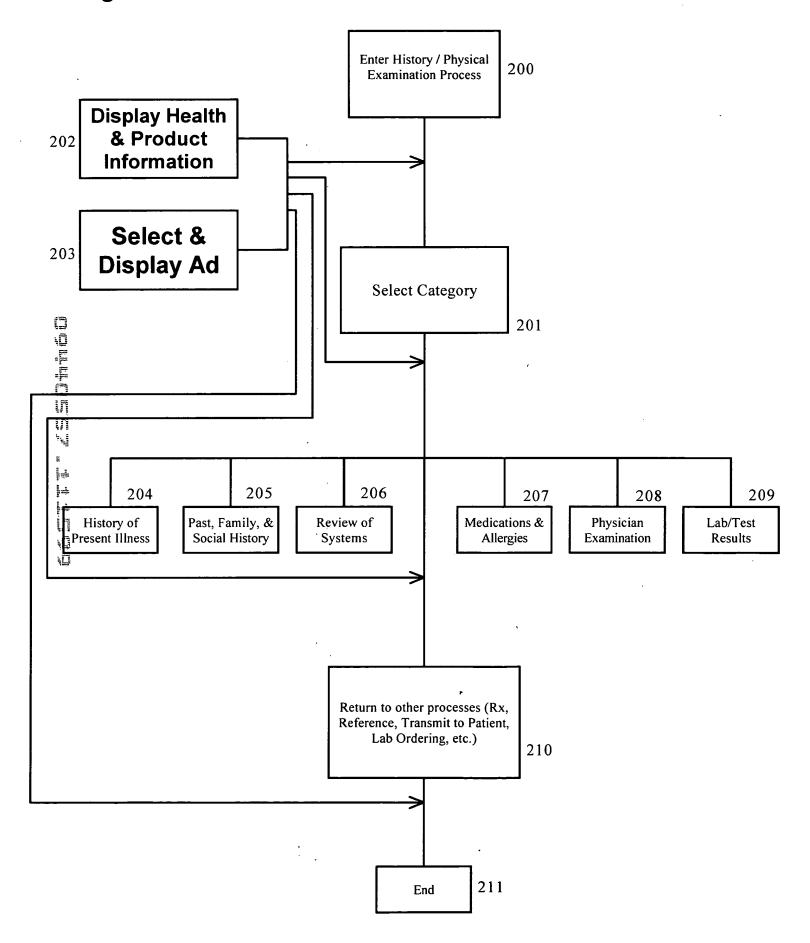


Figure 9



# Patient Record:

John Doe

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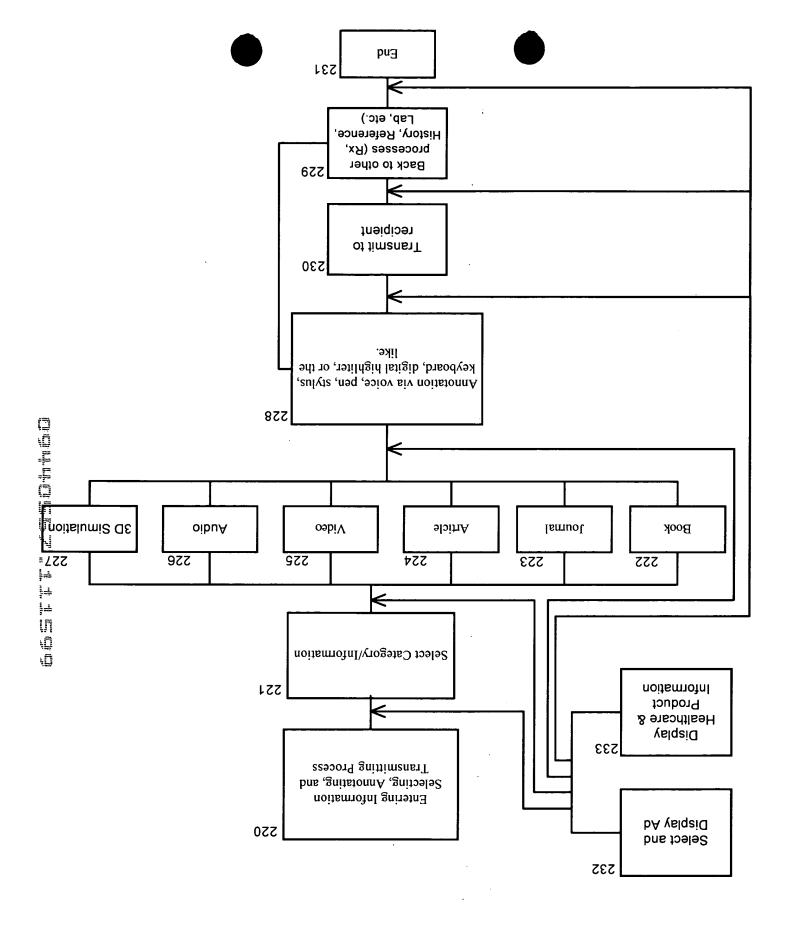
Figure 10

## Figure 11

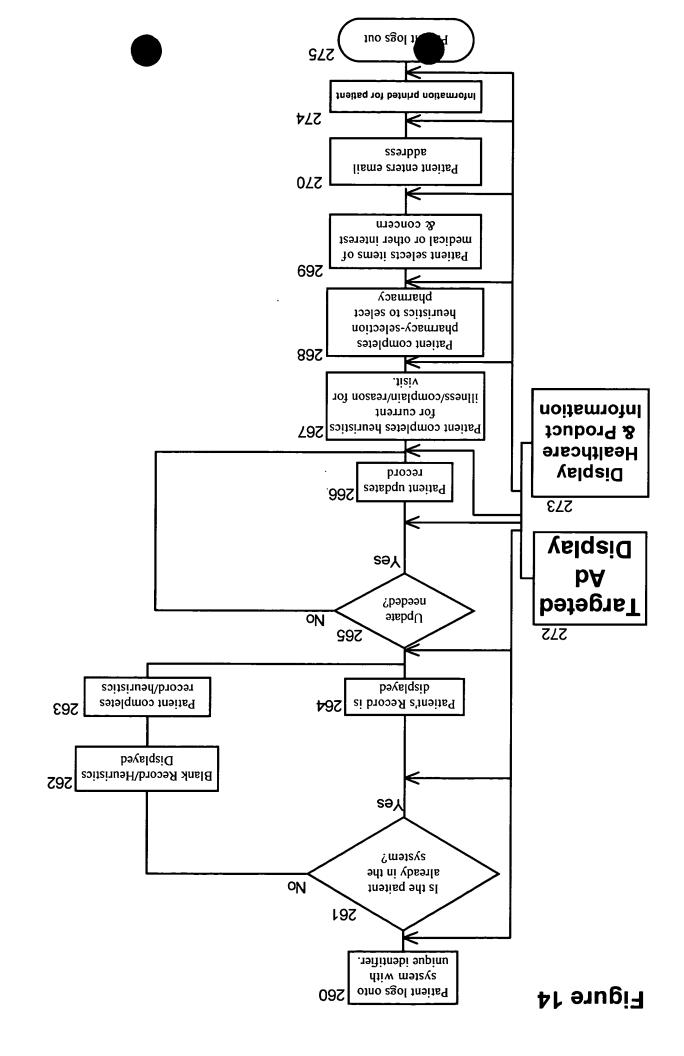
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es: ave rval rt.	Urinalysis  WNL Abnml: WBC RBCs LE Nitrate Bact. Ketones	Diagnostic Results
C-Spine XRAY  Normal/NAD Fracture Epiglottis WNL Enlgd Epiglottis Soft Tissues WNL Lesions/Nodes Discussed with Radiologist Other/Notes:	Other Test Results:	NAS

Figure 12



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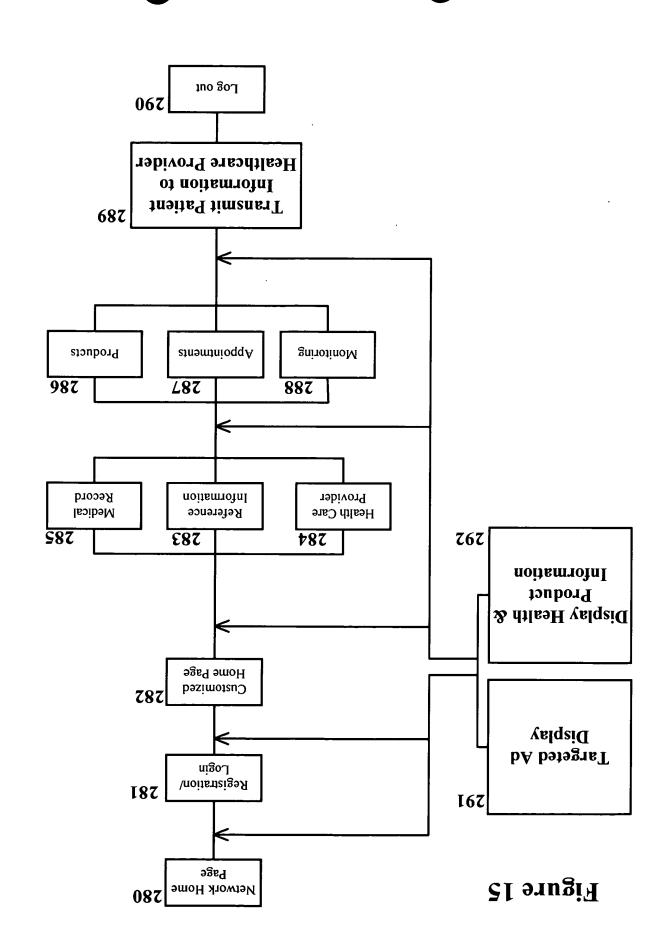
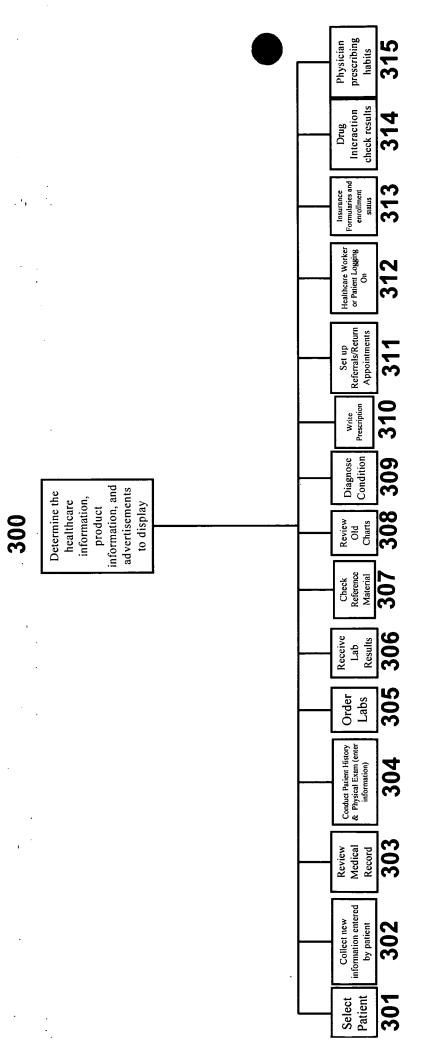
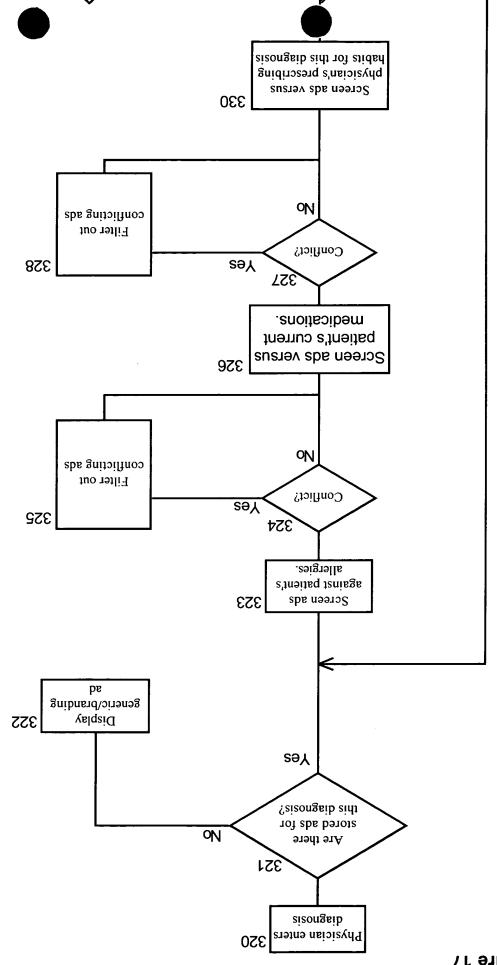
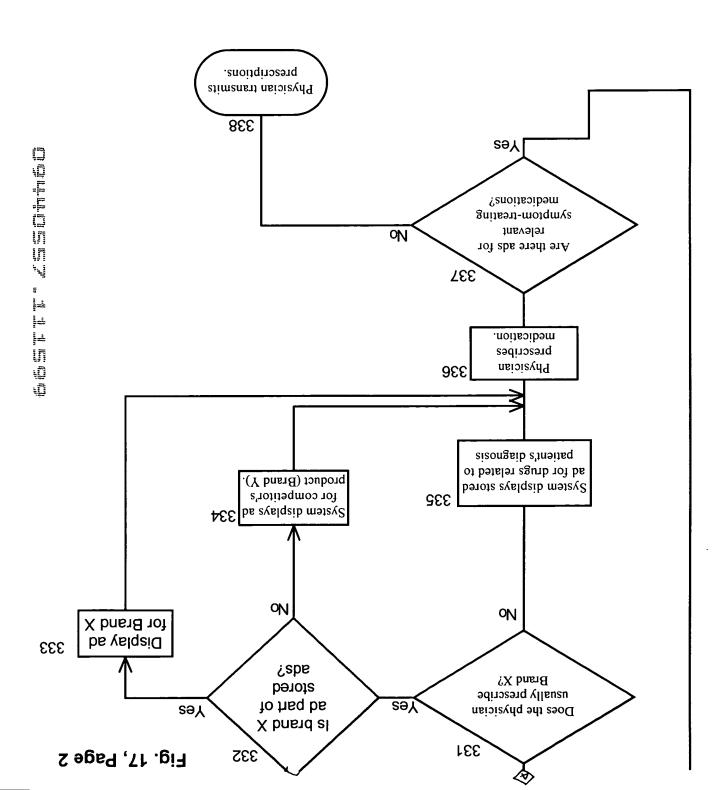


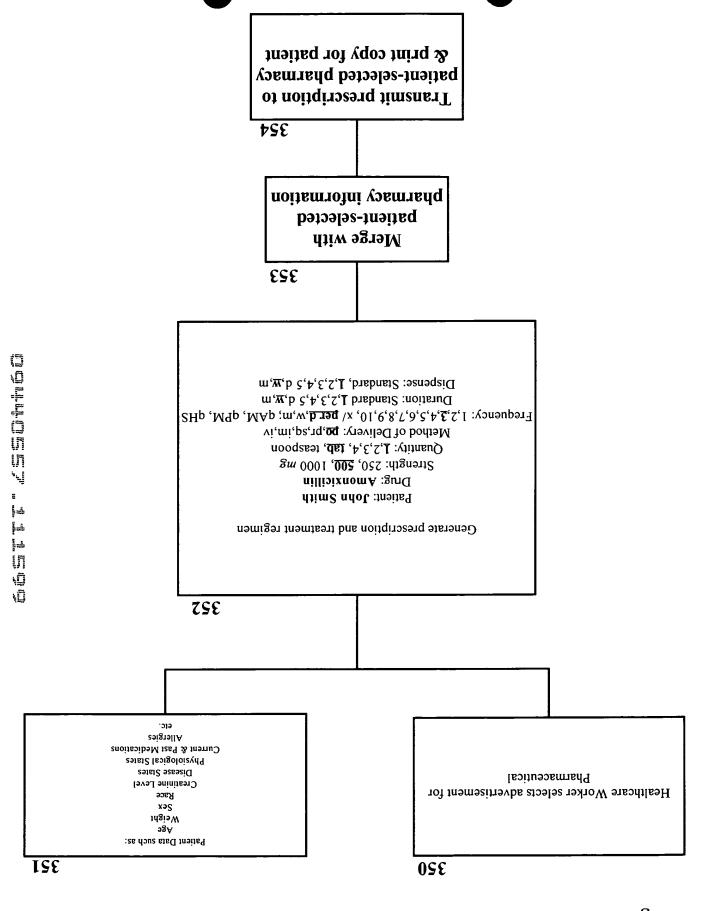
Figure 16



Page 1







Level to select. Touch on the Strength, Quantity, Method of Delivery, Frequency, Duration, and Dispensing

Duration: Standard 1,2,3,4,5 inoitanu Frequency: 1,2,3,4,5,6,7,8,9,10, x/ per d,w,m; qAM, qPM, qHS Method of Delivery: po,pr,sq,im,iv Quantity: 1,2,3,4, tab, teaspoon Strength: 250, 500, 1000 mg Drug: Amonxicillin Patient: John Smith

Dispense: Standard, L,2,3,4,5 d.w.m

Figure 19

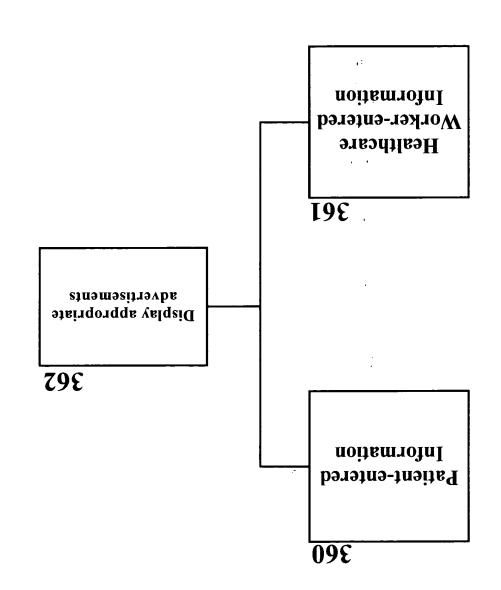
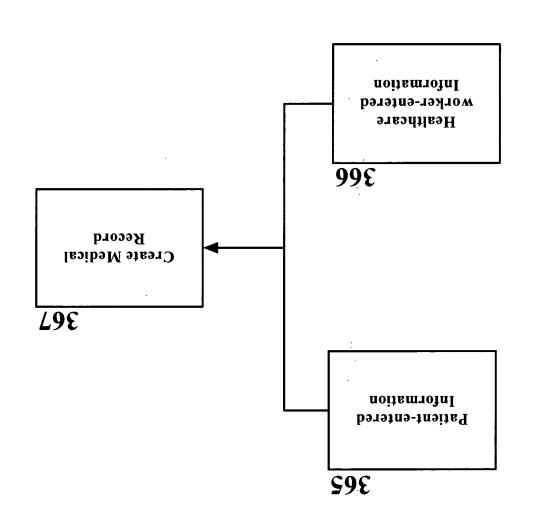
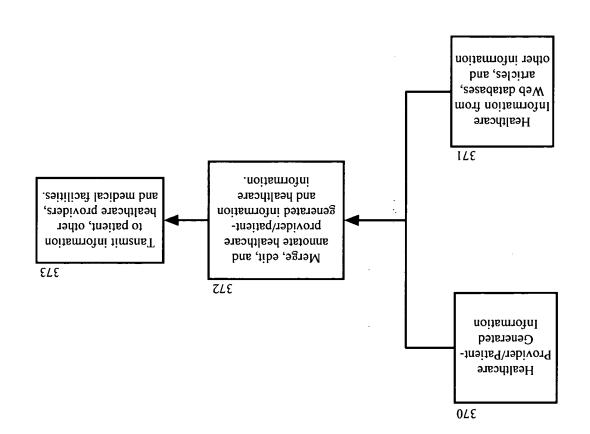
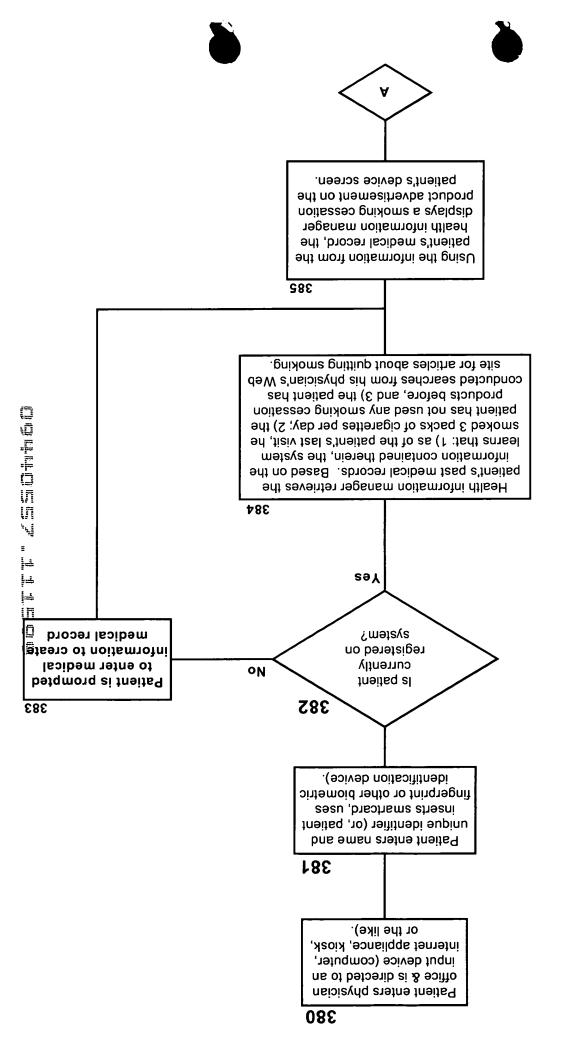


Figure 20







Patient enters relevant medical information about his current condition. From a menu of options, the patient selects "Sore Throat" as his chief complaint. Underneath the section marked "Associated Symptoms," the patient selects "Fever" and "Persistent Coughing."

387

Using the information entered by the patient (such as his associated symptoms of cough and fever), the health information manager displays an advertisement about a sale on cough products at a local drugstore, cough products at a local drugstore,

388

Patient enters/updates information relating to his past, family, and social histories. Patient indicates that he now smokes 2 packs per day, is allergic to penicillin-based drugs, and is currently taking a prescription medication for his allergies and acetaminophen for his allergies and acetaminophen for his fever.

389

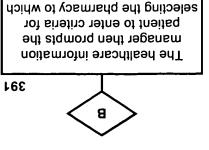
Health information manager notes that the patient is allergic to penicillins and is currently taking one prescription and one Manager updates the patient's medical manager updates the patient's medical record with his allergies, current medications, and new smoking habits (2 packs per day versus 3 packs per day).

390

In the "Review of Systems" screen, the patient answers simply-phrased questions and enters information about his current state of health. Under "General Constitution" he selects "fever." Under "Ear, Nose, and Throat" he selects "sore "hroat," "persistent cough," "nasal throat," "persistent cough," "nasal



Figure 22C



his prescriptions will be sent.

392

having paid for premium exposure. be preferentially displayed due to their pharmacies that meet these criteria may that meet the selected criteria. Some manager generates a list of pharmacies patient, the healthcare information Using the information entered by the

prescriptions. pharmacy to receive Patient selects a

394

393

receive more information. which he would like to patient a list of items about manager next offers the The healthcare information

395

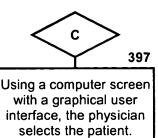
the patient's interests and concerns. relevant advertisements to the physician about patient's interests, as well as by displaying prompting the physician to ask about the manager will use this information later by "Healthy Dieting." The healthcare information "Quitting Smoking," "Heart Disease," and interest. Among these, the patient selects The patient selects those items which are of

968

medical encounter. use during the physician-patient template for physician review and onto the appropriate medical patient is automatically mapped The information entered by the



### Figure 22D



398

Based on the information gathered from the patient's past medical record and from the patient-entered information, the healthcare information manager displays a smoking cessation product advertisement, thus encouraging the physician to ask the patient about his smoking habits and possibly to prescribe the advertised smoking cessation product for the patient.

399

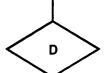
The physician reviews the information entered by the patient. While interviewing the patient, the physician learns that the patient has been having pain in his chest when he inhales deeply. Using the interface on his device, the physician adds this to the patient's chart.

400

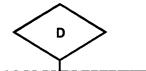
Upon learning about the patient's pain related to breathing, the healthcare information manager analyzes all data and displays an advertisement appropriate for this symptoms on the physician's computer screen.

401

The physician completes his physical exam of the patient and renders a diagnosis of acute strep pharyngitis.



### Figure 22E



Using the diagnosis, the healthcare information manager searches stored advertisements for all ads for products indicated for the given diagnosis, as well as ads for products that might be useful for treating the patient's various associated symptoms, other conditions (i.e. smoking), etc.

403

402

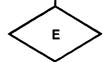
The healthcare information manager searches through all of its antimicrobial drug advertisements. Using the information that the patient is penicillin allergic, the healthcare information manager rules out any ads for any drugs containing penicillin or penicillin-based components.

404

The healthcare information manager selects ads for selected sulfa drugs, quinolones, macrolids, and cephlasporins.

405

The healthcare information manager screens these ads for any possible adverse interactions, finding that cephlasporins have a relative contraindication for use in penicillin-allergic persons. Thus the healthcare information manager attaches an alert to the ad containing this information.





The physician displays his personalized list of most-often prescribed drugs. Brand X--the drug he previously prescribed to the patient--is the antimicrobial on this list. He selects Brand X and the drug name field on the on-screen prescription form is automatically filled in.

407

406

The healthcare information manager rules out the Brand X ad for two reasons:

1) this visit to the physician is the second in the past month and 2) Brand X was prescribed during the last visit, suggesting that Brand X may not have been effective against the patient's infection.

408

The healthcare information manager alerts the physician to the fact the Brand X was prescribed during the previous visit and had no apparent curative effect.

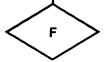
409

At this point the healthcare information manager evaluates the two most applicable ads: one for Brand Y and one for Brand Z. Knowing the patient's insurance company (which the patient entered), the healthcare information manager confirms his enrollment in the said insurance plan. The healthcare information manager then notes that Brand Y is not on the insurer's formulary list of covered medications. Brand Z, on the other hand, is on the insurer's formulary list of covered medications. physician appears to be considering Brand X.

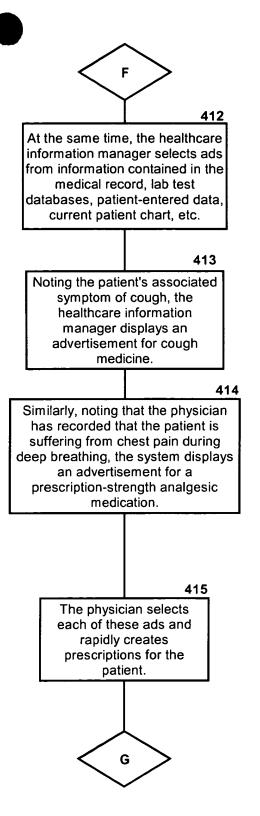
The healthcare information manager thus displays the Brand Z advertisement to the physician.

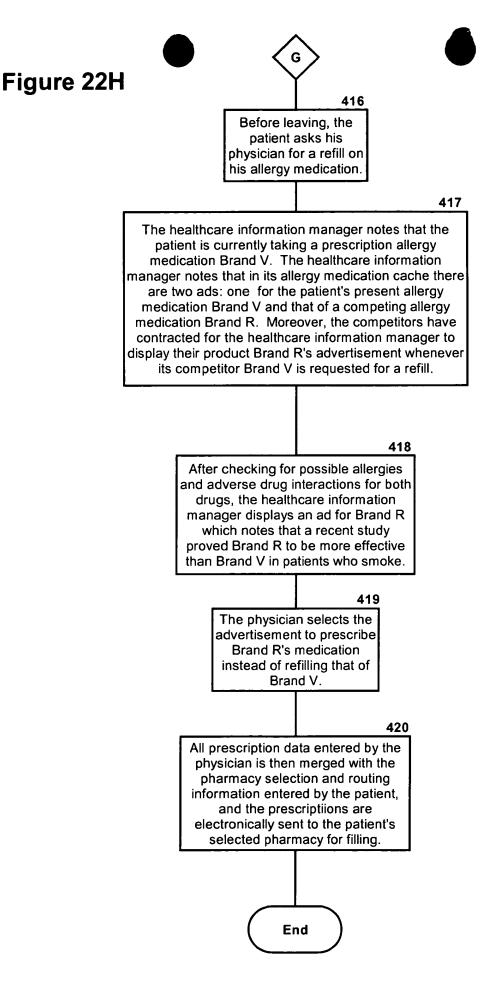
411

The physician, trusting the healthcare information manager's product ad, selects the Brand Z advertisement.
Brand Z replaces Brand X on the on-screen prescription form.



### Figure 22G







# Please select Pharmacy Options



Here you search for a participating pharmacy that meets your particular needs. Simply select from electronically, making it easier for you to get the medicine your doctor may determine you need. any or all of the options below. The next page will show a list of pharmacies that match your requested options. The pharmacy you then choose will receive your prescription information

To select a particular item, touch the down arrow on the right and select your choice from the displayed list.

Then touch the CONTINUE button on the screen.

If you make a mistake and wish to clear your selections, touch RESET.

Prescription Insurance: Delivery Options: Area of Town: Store Hours: Pharmacy:









Please select a Pharmacy

### Advertisement

The following pharmacies meet the requirements you requested:

Select	Pharmacy	Area of Town	Address Store Hours	tore Hours	Delivery Options	Rx Insurance
•	Store A	Central	426 Main 24hrs		None	Co-Pay
	Store B	Central	112 4th	24hrs	None	Co-Pay
•	Store C Central	Central	9815 Park 24hrs None	2.4hrs	None	Co-Pay

To select a particular pharmacy, touch the circular button to the left of the pharmacy's name

Then touch the CONTINUE button on the screen.

If you make a mistake and wish to clear your selections, touch RESET.

If you wish to change your options and search again, touch the BACK button.

Continue

Reset

Back



# Your Pharmacy of Choice

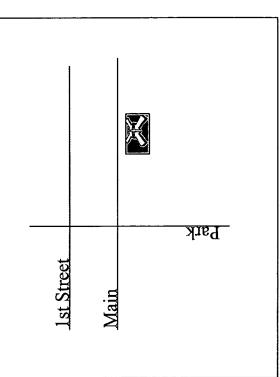
Advertisement

You have chosen the following Pharmacy to fill any prescriptions given to you today by your doctor.

To confirm that this is where you want your prescriptions sent, touch CONFIRM.

If you wish to change your options and search again, touch the BACK button.

Store A
426 Main
Austin, TX 78844
(512) 555-5875
Open 24 Hours











John Doe, Welcome from Dr. Smith

- Update your Blood Pressure
- Make an Appointment

New Report about Smoking and Heart Attacks! | Click Here

Targeted Advertisement

532

Today's Cardiology News:

New Kind of Heart Surgery

The Best Way to Walk

New Study on Heart-Healthy Foods

Academic Articles

Positive Outcomes for CABG Outpatient Infusions Increase

New role of lipids in CHF

Books on the Heart

Advertisement

Targeted

Living Well with Hypertension

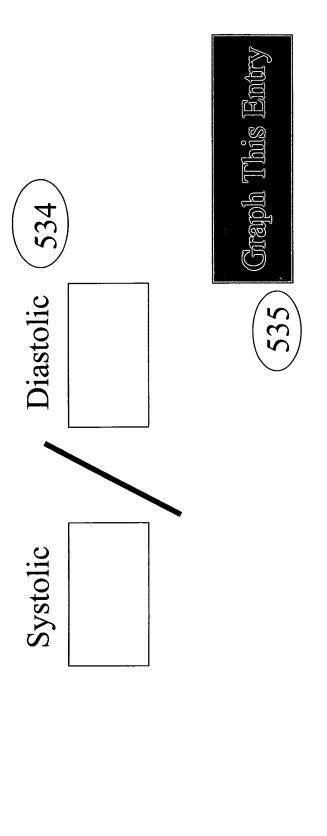
Running for Life: My Bout with MI

How Far We've Come: A Study of Cardiac Theory from 1500-2000

Women at Risk: Women and Carotid Dissection

Advertisement **Targeted** 

Mr. Doe, please enter your blood pressure and click the GRAPH THIS ENTRY button:



 $\cancel{536}$ --- Diastolic --- Systolic 537 7 9 11 13 15 17 19 21 23 25 27 29 John Doe's Blood Pressure Record November 2000 S 140 100 - 08 160 -40 -120 180 9 20



Mr. Doe, please select the title that most closely matches the problem you are having:

•			
	Dental Pain/Problem	<ul><li>Chest Pain/Discomfort</li></ul>	• Pain in Arm/Arms
•	Dizziness	<ul><li>Palpitations</li></ul>	<ul><li>Pain in Upper Back</li></ul>
•	Ear Pain/Problem	<ul><li>Vision Problems</li></ul>	<ul><li>Pain in Lower Back</li></ul>
•	Headache	<ul><li>Vomiting/Nausea/Diarrhea</li></ul>	■ Pain in Leg/Legs
•	Sore Throat	Bloody Stool	<ul><li>Pain in Foot/Ankle</li></ul>



Pain in Hand/Wrist

Abdominal (Belly) Pain

Cough/Congestion

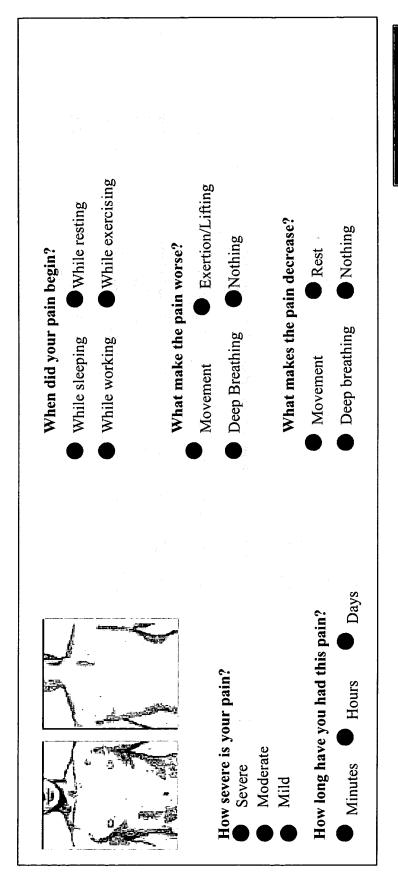
If you make a mistake and wish to clear your selections, touch RESET.

Then touch the CONTINUE button on the screen.





Mr. Doe, please tell us about the chest pain you are having:



Then touch the SEND button on the screen.



Send



If you make a mistake and wish to clear your selections, touch RESET.

# 

Patient:

John Doe

Switch Patient / Log-out

Company

History / Physical Exam / Diagnosis / Rx / Narrative

Logo

Patient's Current Medications

(Click for Refills)

Drug A

Drug C

Drug B Drug D

Select Medication by:

Hot List for Selected Diagnosis

540

Trade Name Generic Name Formulary (by Class) Class

Drug H

Drug G

Drug F

Drug E

541

Advertisement

Interactions Checked Allergies Checked

Formulary Checked

Date

Prescription Pad

John Doe

Drug Q (with Prescribing Parameters)

Edit

)el

Drug V (with Prescribing Parameters) Edit Edit )el **Jel** 

Drug A (with Prescribing Parameters)

Physician's Name / Signature

PIN:

**Transmit** 

Physician's DEA Number

